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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/766,256 | 01/27/2004 | Masato Minami | 1232-5263 | 4147 |

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| EXAMINER | |
|---|---|
| NGUYEN, TRI V | |
| **ART UNIT** | **PAPER NUMBER** |
| 1751 | |

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/766,256 | MINAMI, MASATO | |
| | Examiner | Art Unit | |
| | Tri V. Nguyen | 1751 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

1. Claim 9 is objected to because of the following informalities: In line 1, misspelling of the word polymerization. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hou et al. (US, 6,113,810).

Hou et al. disclose a polymer electrophoretic particle having a surface with a controlled functionality by fixing a compound such as N-(isobutoymethyl) arcrylamide to the surface (col 5, lines 9-50 and claims 1-15). The electrophoretic particles can be negatively or positively charged depending on the functionality of the end groups (col 6, line 30 to col 7, line 17). Furthermore, Hou et al. discloses that the electrophoretic particles are made by emulsion or suspension polymerization, in particular a polymerization initiator and a surfactant with the preferred functionality are used (process one, col 4 to col 7). Hou et al. also disclose a fluid medium that includes the electrophoretic particles (col 3, lines 13-39) and a display that includes the electrophoretic fluid contained between a cathode and an anode that are deposited on glass plates with the particles moving depending on the voltage applied (col 3, lines 13-39 and fig. 1). Accordingly, the teachings of Hou et al. anticipate the material limitations of the present claims.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 6, 7 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Albert et al. (US 6,839,158).

Albert et al. disclose an electrophoretic particle such as a neat pigment, a dyed pigment, a polymer or a dyed polymer (col 9, line 1 to col 10 line 50) whose surface is chemically modified to improve the charge by fixing an amphipathic polymer with a basic or acidic property (col 13, lines 39-60 and col 14, lines 15-67). Albert et al. also disclose an electrophoretic display comprising two substrates and two electrodes with a suspending fluid containing the electrophoretic particles which move depending on the applied voltage (col 2, lines 37-53; col 3, lines 6-30; col 6, lines 31-63 and figs 1a-1b). Accordingly, the teachings of Albert et al. anticipate the material limitations of the present claims.

### *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3-5, 8-10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US 6,839,158).

Albert et al. disclose an electrophoretic particle with an amphipathic group fixed to the surface but do not explicitly disclose the group with the claimed hydrophobic and ionic properties. Albert et al. disclose that C12 to C50 alkyl as an attached group (col 14, lines 15-26). Since an amphipathic group by definition contains a hydrophobic component and a hydrophilic component, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the particle composition as taught by Albert et al. with the group containing an unsaturated carbon or aliphatic hydrocarbon chain or an ionic group since it was known in the art that is used to provide unsaturated carbon or aliphatic hydrocarbon chain has hydrophobic properties and an ionic functional group has hydrophilic properties. Furthermore, Albert et al. teach that the fixed group is used in the charge of the molecule. Regarding claims 12-14, Albert et al. disclose a fluid medium that the electrophoretic particles (col 2, lines 37-53). Albert et al., however, fails to specifically disclose an aliphatic hydrocarbon chain of the length as those recited by the Applicant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch,* 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a

*prima facie* case of obviousness exists because the claimed ranges "overlap or lie inside ranges disclosed by the prior art", see *In re Wertheim,* 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re Woodruff,* 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I.

Albert et al. does not explicitly disclose the details of the method of producing the electrophoretic particles. Albert et al. disclose the same core for the electrophoretic particles, the same group fixed to the surface and the same chemical processes such as suspension polymerization (col 11, lines 28-51) as those disclosed by Applicant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the method as taught by Albert et al., with fixing the amphipathic group via a polymerization reaction or copolymerization with comonomer since these are well-known particle formation methods.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri V. Nguyen whose telephone number is (571) 272-6965. The examiner can normally be reached on M-F 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nvt

NVT

Lorna M. Douyon

LORNA M. DOUYON
PRIMARY EXAMINER